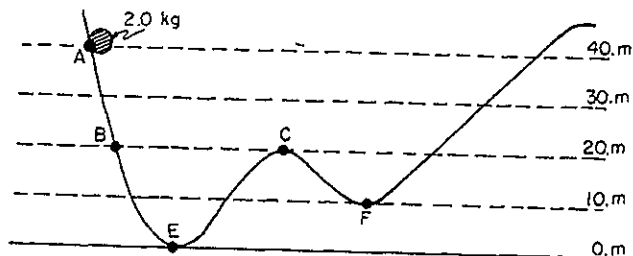


WORK SHEET

Base your answers to questions 1 through 5 on the diagram below. Which represents a 2.0-kilogram mass placed on a frictionless track at point A and released from rest. Assume the gravitational potential energy of the system to be zero at point E.



1. The gravitational potential energy of the system at point A is approximately

- 1) 80. J
- 2) 20. J
- 3) 8.0×10^2 J
- 4) 7.0×10^2 J

2. Compared to the kinetic energy of the mass at point B, the kinetic energy of the mass at point E is

- 1) $\frac{1}{2}$ as great
- 2) twice as great
- 3) the same
- 4) 4 times greater

3. As the mass travels along the track, the maximum height it will reach above point E will be closest to

- 1) 10. m
- 2) 20. m
- 3) 30. m
- 4) 40. m

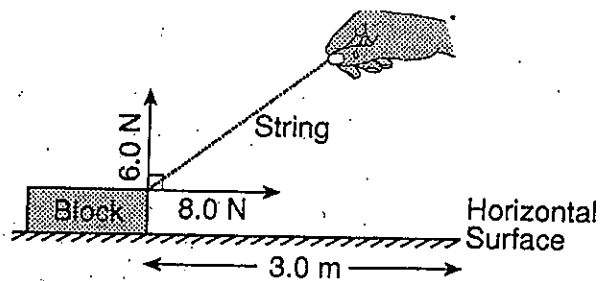
4. If the mass were released from rest at point B, its speed at point C would be

- 1) 0. m/s
- 2) 0.50 m/s
- 3) 10. m/s
- 4) 14 m/s

5. Compared to the total mechanical energy of the system at point A, the total mechanical energy of the system at point F is

- 1) less
- 2) more
- 3) the same

#6-8
A student pulls a block 3.0 meters along a horizontal surface at constant velocity. The diagram below shows the components of the force exerted on the block by the student.



6) How much work is done against friction?

- 1) 18 J
- 2) 24 J
- 3) 30. J
- 4) 42 J

7) Which is a scalar quantity?

- 1) force
- 2) energy
- 3) displacement
- 4) velocity

8) An object weighing 15 Newtons is lifted from the ground to a height of 0.22 meter. The increase in the object's gravitational potential energy is approximately

- 1) 310 J
- 2) 32 J
- 3) 3.3 J
- 4) 0.34 J